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MS APPEAL BRIEF - PATENTS  
PATENT  
0630-1179P

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of

Before the Board of Appeals

See-Woong PARK

Appeal No.:

Appl. No.: 09/773,540

Group: 2636

Filed: February 2, 2001

Examiner: V. BALI

Conf.: 8036

For: IRIS RECOGNITION SYSTEM

BRIEF TRANSMITTAL FORM

**MS APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

March 11, 2005

Sir:

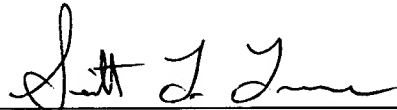
Transmitted herewith is a Brief on behalf of the appellants in connection with the above-identified application.


- ☐ The enclosed document is being transmitted via the Certificate of Mailing provisions of 37 C.F.R. § 1.8.
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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

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Attachment(s)



PATENT  
0630-1179P

**IN THE U.S. PATENT AND TRADEMARK OFFICE**

Appellant:	Se-Woong PARK	Conf. No.:	8036
Appl. No.:	09/773,540	Group:	2623
Filed:	February 2, 2001	Examiner:	V. Bali
For:	IRIS RECOGNITION SYSTEM		

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Appl. No.:	09/773,540	Group:	2623
Filed:	February 2, 2001	Examiner:	V. Bali
For:	IRIS RECOGNITION SYSTEM		

**BRIEF ON APPEAL**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Due: March 11, 2005

Sir:

Appellants hereby appeal from the decision in the final Office Action dated August 11, 2004 finally rejecting claims 1-10 and 18-23, and objecting to claims 11-17 for being dependent on a rejected base claim, modified by the decision in the Advisory Action dated December 28, 2004 which entered the Amendment filed on November 12, 2004 that canceled claims 2 and 7 and amended claims 1 and 6.

**(i) Real party in interest**

The real party in interest for this Application is LG Electronics, Inc. as evidenced by an Assignment recorded on February 2, 2001 at Reel 011515, Frame 0347.

(ii) Related appeals and interferences

To the best of Appellants' knowledge, there are no other prior or pending appeals of this Application, or patent interference proceedings, or judicial proceedings which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision of this Appeal.

(iii) Status of claims

In the Application on appeal, claims 1, 3-6 and 8-23 are pending. Claims 2 and 7 have been canceled. Claims 1, 3-6, 8-10 and 18-23 are rejected and are on appeal. Claims 11-17 are objected to as being dependent on a rejected base claim.

(iv) Status of amendments

The Amendment under 37 CFR § 1.111, filed on May 21, 2004, has been entered. The Amendment under 37 CFR §1.116, filed on November 12, 2004 has been entered. The Amendment under 37 CFR §1.116, filed on November 12, 2004, was entered in the file per the Advisory Action dated December 28, 2004.

(v) Summary of claimed subject matter

Claims 1, 6 and 18 are the three independent claims. Claim 1 is directed to an iris recognition apparatus having a guidance unit 20, having an optical axis, to guide the position of an eye; an image recognition unit 3,

having an optical axis, to recognize an image of an iris passed through the guidance unit 20; and an optical axis adjustment unit having a vertical movement unit, depicted in Fig. 5, to move the image recognition unit 3 in a vertical direction and a horizontal movement unit, depicted in Figs. 4A and 4B, to move the image recognition unit in a horizontal direction, in order to align optical axes of the image recognition unit and guidance unit, wherein the guidance unit 20 has a guidance region 25 printed at a center of a front surface thereof so that a person can locate his or her eye at the guidance unit 20.

Claim 6 is directed to an iris recognition apparatus having a guidance unit 10, having an optical axis, to guide an eye to a predetermined position in front of a lens 5; a light to provide illumination of the eye by radiating light of more than a predetermined luminosity; an image recognition unit 3, having an optical axis, including an optical system having a plurality of lenses 5 for gathering light and a pickup device 7 for imaging an iris of the eye; a fixing frame 10 supporting the image recognition unit 3 from below and being engaged with the guidance unit 10; and an optical axis adjustment unit having a vertical movement unit, shown in Fig. 5, for vertically moving the image recognition unit 3 and a horizontal movement unit, shown in Figs. 4A and 4B, for horizontally moving the image recognition unit 3 for adjusting the optical axis of the image recognition unit 3 and guidance unit 20, wherein the guidance unit 20 has a guidance region 25 printed at a center of a front surface thereof so that a person can locate his or her eye at the guidance unit 20.

Claim 18 is directed to an optical recognition apparatus, comprising a guidance unit 10 to guide an eye into an appropriate position for recognition, the guidance unit 10 having an optical axis, wherein the guidance unit 10 has a guidance region 25 printed at a center of a front surface thereof so that a person can locate his or her eye at the guidance unit 10; an image recognition unit 3 to recognize an image of the eye transmitted by the guidance unit 10, the image recognition unit 3 having another optical axis; and an optical axis alignment unit, shown in Figs. 4A, 4B and 5, connected to one of the guidance unit 10 and the image recognition unit 3 to align the optical axes of the image recognition unit 3 and guidance unit 10.

Claims 1, 6 and 18 are separately patentable and do not stand or fall together for reasons discussed, *infra*, including the fact that each independent claim recites a number of different patentable features.

(vi) Grounds of rejection

Claims 1, 3-6, 8-10 and 18-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,764,341 to Fujieda et al. (hereinafter, "Fujieda") in view of Appellant's Admitted Prior Art (APA).

The rejection alleges that Fujieda discloses the claimed invention except for the integral parts of the iris recognition apparatus such as a guidance unit, a light to provide illumination of the eye, and an image recognition unit, as claimed.

The Office Action asserts that the iris recognition system and all the parts such as a guidance unit, a light to provide illumination of the eye, and an image recognition unit, are well known and being used conventionally as admitted by Appellant.

The Office Action concludes that it would be obvious to “simply use the well known features of the iris recognition system in to the Fujieda’s system of alignment and measuring or an eye as it is conventionally use in the art (as can be seen by the instant specification see page 1 last two lines).” The Office Action concludes that “this modification provides an apparatus that will do the iris recognition precisely because the apparatus will align the eye with the optical axis.” (See page 3, lines 2-6 of the Office Action mailed February 3, 2004).

(vii) Argument

Claims 1, 3-6, 8-10 and 18-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,764,341 to Fujieda et al. (hereinafter, “Fujieda”) in view of Appellant’s Admitted Prior Art (APA).

The actual rejection is reproduced in section (vi), above.

Appellants respectfully submit that this rejection is improper and should be reversed for the following reasons.

In rejecting claims under 35 U.S.C. §103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598



(Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention.

Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. These showings must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not “evidence.” See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999). Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish

*prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Moreover, a factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. See, In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Initially, Appellant respectfully notes that, in this Application, the only admitted “prior art” is stated on page 4, line 8, to be the iris recognition system schematically illustrated in Figure 1.

Fig. 2 is not admitted prior art. Fig. 2 is labeled “conventional art” but is not admitted prior art. In order for something to be considered admitted prior art, the admission must be clear, unmistakable and unequivocal. See, in this regard, Fleming v. Giesa (BdPatApp&Int) 13 USPQ2d 1052 (7/17/1989); Harner et al. v. Barron et al., 215 USPQ 743 (Comr Pats 1981), Suh v. Hoefle (BdPatApp&Int) 23 USPQ2d 1321 (4/30/1991); Issidorides v. Ley (BdPatApp&Int) 4 USPQ2d 1854 (4/2/1985); and Ex parte The Successor In Interest Of Robert S. McGaughey (BdPatApp&Int) 6 USPQ2d 1334 (3/4/1988).

Appellant has only admitted that Fig. 1 is prior art. It is impermissible for the Office Action to use anything but Fig. 1 as admitted prior art.

Independent claim 1 positively recites an iris recognition system, including an image recognition unit to recognize an iris, as well as other features including, for example, an optical axis adjustment unit to align optical axes of the image recognition unit and guidance unit.

Independent claim 18 positively recites an optical recognition apparatus, including a guiding unit for recognition, as well as other features, including an optical axis alignment unit to align the optical axes of an image recognition unit and guidance unit.

Fujieda, the base reference used in the rejection, does not disclose this optical axis alignment feature but, instead, discloses three separate optical axes that are not aligned. Fujieda's three separate optical axes are shown in Fig. 5 and discussed in cols. 6 and 7 of Fujieda. These three optical axes are labeled "L", "M" and "N" that form target images. As clearly shown in Fig. 5, none of these three optical axes is aligned with the other optical axes. Nor does Fujieda disclose aligning these three optical axes that form target images.

In response to this argument, the Office Action states that, "Fujieda, in col. 3, lines 40-45 states with the help of figure 1 numerical 4 for the alignment unit to align the apparatus to the eye, i.e. the optical axis in order to take the image." (See page 3, lines 10-12 of the Office Action mailed August 11, 2004). Appellant respectfully submits that this response does not address Appellant's argument.

Fujieda's element 4 is a joystick which moves movable part 3 forward and backward and/or left and right to align an eye to be measured, i.e., a measuring eye, in a right and left direction and in an upper and lower direction and in a before and behind direction. See, for example, col. 8, line 41 to col. 9, line 57. Aligning eyes to be measured for refractive power and/or interpupillary distance is not the same as aligning optical axes, as recited.

Additionally, col. 3, lines 40-45 of Fujieda describe Fig. 1 of Fujieda, which does not disclose the three separate, non-aligned optical axes "L", "M" and "N," or in any way discuss these three optical axes or their relationship to each other.

Furthermore, in order to take an image of the eye E, only TV camera 24 needs to be lined up with the eye E, which it is, along axis "L" connecting the TV camera 24 and eye E. The TV camera 24 does not take an image of the light source 37, for example, nor does it take an image of light source 31, nor are the optical axes "M" and/or "N" aligned with optical axis "L." This is immediately apparent by looking at Fig. 1 of Fujieda.

Moreover, independent claims 1 and 18 recite alignment of the optical axes of the image recognition and guidance units. The base reference does not disclose or suggest this axis alignment feature of the invention recited in independent claims 1 and 18.

Moreover, Fujieda does not disclose or suggest "an image recognition unit to recognize an image of an iris passed through the guidance unit," as recited

in independent claim 1, or “an image recognition unit including an optical system having a plurality of lenses for gathering light and a pickup device for imaging an iris of the eye,” as recited in claim 6.

Nor does Fujieda disclose imaging an iris of the eye or recognizing an image of an iris, as recited in claims 1 and 6.

The Office Action does not even address the claimed feature of alignment of the optical axes of an image recognition unit and a guidance unit, found in independent claims 1, 6 and 18. Therefore, the rejection fails to make out a *prima facie* case of obviousness of the claimed invention recited in independent claims 1, 6 and 18, in the dependent claims 2-5, which depend from claim 1, or in the dependent claims 8-16, which depend from independent claim 6, or in the dependent claims 19-22, which depend from claim 18.

The Office Action then turns to the prior art system of Fig. 1 and concludes that it would be obvious to “simply use the well known features of the iris recognition system in the Fujieda’s system of alignment and measuring of an eye as it is conventionally use[d] in the art (as can be seen by the instant specification – see page 1, last two lines), and this modification provides an apparatus that will do the iris recognition more precisely because the apparatus will align the eye with the optical axis.”

This statement combining the applied references is improper at least because it completely fails to provide any objective evidence of proper motivation for one of ordinary skill in the art to modify Fujieda in view of the

Figure 1 prior art. A showing of a suggestion, teaching, or motivation to combine the prior art references is an “essential evidentiary component of an obviousness holding.” C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232(Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not “evidence.” See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Moreover, this showing additionally fails to present clear and particular objective evidence of the desirability of modifying Fujieda in view of the Fig. 1 admitted prior art. Broad conclusory statements about the teaching of different eye measuring devices, standing alone, is not “evidence” of proper motivation. See In re Dembiczak, cited above.

Appellant respectfully submits that the Office Action is engaging in impermissible hindsight reconstruction of the claimed invention using appellant's structure as a template and selecting elements from references to fill in the gaps. The references themselves do not provide any teaching whereby the appellant's combination would have been obvious. Cf., In re Gorman, 911 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir, 1991).

Something in the prior art as a whole must suggest the desirability, and thus obviousness, of making the combination. See, In re Beattie, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992); Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Co., 730 F.2d 1452,

1462, 221 USPQ 481, 488 (Fed. Cir. 1984). Unfortunately, the Office Action does not provide objective factual evidence that anything in the prior art suggests the desirability of making the suggested combination.

Here, the base reference device, Fujieda's ophthalmic apparatus, is not even an iris recognition system. All that Fujieda discloses is that its ophthalmic apparatus can be used for "objective eye refractive power measuring . . . and the like" (col. 1, lines 14-16), and for determining "interpupillary distance of an examinee." (col. 1, lines 21-26).

Fujieda contains absolutely no disclosure of an iris recognition system. The fact that iris recognition systems are known is not evidence that it would be obvious to modify Fujieda to be used as an iris recognition system, absent evidence of motivation to combine both references and modify one in view of the other to achieve the claimed invention. Cf., In re Dembiczak, cited above.

Moreover, the fact that the iris recognition system used as prior art is found only in Appellant's disclosure is a good indication that the only reason to combine these references is improper hindsight reconstruction of Appellant's invention based solely on Appellant's disclosure.

Furthermore, the applied references themselves differ substantially and teach away from being combined, yet the Office Action never addresses these differences, as it is supposed to in determining whether the invention as a whole is obvious.

One significant difference, which is noted above, is that Fujieda does not align different optical axes. Nor does the admitted prior art. Thus, even if these references were somehow combined, they would not result in the claimed invention as recited in independent claims 1 and 18.

In response to these arguments directed to the failure of the Examiner to provide objective factual evidence of proper motivation to combine these references, the Examiner asserts that “[I]n this case, to have the eye adjusting for the purpose of image of the iris in order to recognize the iris is a common knowledge in the art (as said in the instant specification page 1, last 2 lines).”

The Examiner’s argument begs the question of whether it would be obvious to completely redesign Fujieda, which really does not disclose iris recognition, and is really nothing more than “an objective eye-refractive power measuring apparatus or the like” (col. 1, lines 14-15), to make its three separate optical axes become aligned with one another, and image an iris for iris recognition purposes in view of the fact that iris recognition devices exist in the art.

Additionally, amended independent claims 1 and 18 further positively recite “wherein the guidance unit has a guidance region printed at a center of a front surface thereof so that a person can locate his or her eye at the guidance unit.” This positively recited feature is not found in any of the applied art and, thus, is neither disclosed by, or obvious in view of, the applied art. Moreover, with this feature, a person can locate his or her eye at the guidance unit and



easily adjust an optical axis in case that the optical axes do not match each other. In this manner, the claimed invention differs drastically from Fujieda.

With respect to independent claim 6 and dependent claims 8-10, neither Fujieda nor the admitted prior art of Fig. 1, discloses an iris recognition apparatus having an image recognition unit for imaging an iris of the eye or the positively recited feature of “wherein the guidance unit has a guidance region printed at a center of a front surface thereof so that a person can locate his or her eye at the guidance unit.” Nor does Fujieda disclose an optical axis adjustment unit for adjusting any of the three optical axes. Instead, Fujieda adjusts and detects positions of target images relative to a measurement axis – see col. 7, lines 12-55, for example.

It is submitted that the Examiner’s rejection of claims 1, 3-6, 8-10 and 18-23 under 35 USC 103(a) as unpatentable over Fujieda in view of Appellant’s admitted prior art violates Appellant’s fundamental substantive and procedural due process under the Administrative Procedures Act, fails to present any objective evidence to provide one of ordinary skill in the art proper motivation to combine these references as suggested, and fails to take into consideration the differences between the references which would teach against combining these two references. Furthermore, even if the references were properly combined, which they are not for reasons stated above, the reference combination would not result in, or render obvious, the claimed invention.

Appellant also respectfully submits that each independent claim, i.e., claims 1, 6 and 18, have been argued separately and that each independent claim recites a separate patentable invention for the reasons presented above.

SUMMARY AND CONCLUSION

Appellants respectfully submit that claims 1, 3-6, 8-10 and 18-23 are patentable over the applied art, that independent claims 1, 6 and 18 recite separate patentable inventions, and that all of the rejections of record should be reversed.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit


Brief on Appeal


Application. No. 09/773,540

Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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CLAIMS APPENDIX

(viii) Claims appendix

1. (Previously Presented) An iris recognition apparatus, comprising:  
a guidance unit, having an optical axis, to guide the position of an eye;  
an image recognition unit, having an optical axis, to recognize an image of  
an iris passed through the guidance unit; and

an optical axis adjustment unit having a vertical movement unit to move  
the image recognition unit in a vertical direction and a horizontal movement unit  
to move the image recognition unit in a horizontal direction, in order to align  
optical axes of the image recognition unit and guidance unit,

wherein the guidance unit has a guidance region printed at a center of a  
front surface thereof so that a person can locate his or her eye at the guidance  
unit.

2. (Canceled)

3. (Original) The apparatus according to claim 1, wherein the  
guidance unit transmits infrared radiation, and reflects visible radiation.

4. (Original) The apparatus according to claim 1, wherein the  
horizontal movement unit of the optical axis adjustment unit moves linearly in a  
horizontal direction.

5. (Original) The apparatus according to claim 1, wherein the horizontal movement unit of the optical axis adjustment unit moves rotationally in a horizontal direction.

6. (Previously Presented) An iris recognition apparatus, comprising:  
a guidance unit, having an optical axis, to guide an eye to a predetermined position in front of a lens;

a light to provide illumination of the eye by radiating light of more than a predetermined luminosity;

an image recognition unit, having an optical axis, including an optical system having a plurality of lenses for gathering light and a pickup device for imaging an iris of the eye;

a fixing frame supporting the image recognition unit from below and being engaged with the guidance unit; and

an optical axis adjustment unit having a vertical movement unit for vertically moving the image recognition unit and a horizontal movement unit for horizontally moving the image recognition unit for adjusting the optical axis of the image recognition unit and guidance unit,

wherein the guidance unit has a guidance region printed at a center of a front surface thereof so that a person can locate his or her eye at the guidance unit.

7. (Canceled)

8. (Original) The apparatus according to claim 6, wherein the guidance unit transmits infrared radiation, and reflects visible radiation.

9. (Original) The apparatus according to claim 6, wherein the horizontal movement unit of the optical axis adjustment unit moves linearly in a horizontal direction.

10. (Original) The apparatus according to claim 6, wherein the horizontal movement unit of the optical axis adjustment unit moves rotationally in a horizontal direction.

11. (Original) The apparatus according to claim 10, wherein the horizontal movement unit includes

a horizontal movement frame installed on a top surface of the fixing frame, said horizontal movement frame having a hole formed at a center of the top surface thereof, the fixing frame having an extrusion unit formed at the center of the top surface thereof and having another hole formed at one edge thereof, and the horizontal movement frame having an adjustment guide formed at a position corresponding to the hole on the fixing frame at one corner thereof.

12. (Original) The apparatus according to claim 11, wherein the adjustment guide is formed higher than other portions of the horizontal movement frame, is indented at a center thereof, and has extrusion units at left and right portions thereof.

13. (Original) The apparatus according to claim 11, wherein, on the horizontal movement frame, more than one long rotation guide hole are formed at positions in a common radius around the central hole.

14. (Original) The apparatus according to claim 11, wherein a fixing part is coupled to the long rotation guide hole.

15. (Original) The apparatus according to claim 6, wherein the vertical movement unit includes

a lifting frame installed on a top surface of the fixing frame, said lifting frame having a lifting control unit curved being higher than a center of the lifting frame at both ends thereof, said lifting control unit including more than two vent holes punched at both ends of the lifting frame and a lifting guide bar extended from the vent holes to the fixing frame to be thus fixed thereto.

16. (Original) The apparatus according to claim 15, wherein the lifting guide bar has a screw thread formed on its outer surface, and has a stopper formed at its upper end.

17. (Original) The apparatus according to claim 16, wherein an elastic member is installed on an outer surface of the lifting guide bar.

18. (Previously Presented) An optical recognition apparatus, comprising:

a guidance unit to guide an eye into an appropriate position for recognition, the guidance unit having an optical axis, wherein the guidance unit has a guidance region printed at a center of a front surface thereof so that a person can locate his or her eye at the guidance unit;

an image recognition unit to recognize an image of the eye transmitted by the guidance unit, the image recognition unit having another optical axis; and

an optical axis alignment unit connected to one of the guidance unit and the image recognition unit to align the optical axes of the image recognition unit and guidance unit.

19. (Original) The apparatus according to claim 18, wherein the alignment unit is connected to the guidance unit, and operates to move the optical axis of the guidance unit.



20. (Original) The apparatus according to claim 18, wherein the alignment unit is connected to the image recognition unit, and operates to move the optical axis of the image recognition unit.

21. (Original) The apparatus according to claim 20, wherein the alignment unit is operable to translate the optical axis in more than one direction.

22. (Original) The apparatus according to claim 20, wherein the alignment unit is manually adjustable.

23. (Original) The apparatus according to claim 20, wherein the alignment unit includes at least one actuator to move the optical axis.